

SEQUENCE LISTING

<110> Howard A. Fields
<110> Yury E. Khudyakov

<120> Synthetic Peptides Immunoreactive With Hepatitis A
Virus Antibodies

<130> 14114.0342P1

<140> US/10/031,088
<141> 2002-01-14

<150> PCT/US00/19267
<151> 2000-07-14

<150> 60/144,412
<151> 1999-07-15

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VP2 and VP4 Peptides

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1 5 10 15

Ile Gln Ser Val Gln
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VP2 and VP4 Peptides

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Ser Ser Val His Gln
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VP2 and VP4 Peptides

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Glu Val Gly Ser His Gln Val Glu Pro Leu Arg Thr Ser Val Asp Lys
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Pro Gly Ser Lys Gln
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VP2 and VP4 Peptides

<400> 4
Glu Pro Leu Arg Thr Ser Val Asp Lys Pro Gly Ser Lys Lys Thr Gln
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Gly Glu Lys Phe Gln
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VP2 and VP4 Peptides

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Asp Lys Pro Gly Ser Lys Lys Thr Gln Gly Glu Lys Phe Phe Leu Ile
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His Ser Ala Asp Gln
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VP2 and VP4 Peptides

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1 5 10 15

Tyr Ala Arg Phe Gln
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 VP2 and VP4 Peptides

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Thr Pro Phe Gln
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 VP2 and VP4 Peptides

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Pro Gly Asp Gln
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 VP2 and VP4 Peptides

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Trp Ser Glu Leu Gln
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 VP2 and VP4 Peptides

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Arg Phe Thr Asp Gln
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VP3 Peptide

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Trp Thr Ser Ile Gln
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VP3 Peptide

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Gly Gly Ile Lys Ile Thr His Phe Thr Thr Trp Thr Ser Ile Pro Thr
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Leu Ala Ala Gln
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VP3 Peptide

<400> 13
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Ile Pro Val Asp Gln
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 VP3 Peptide

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 Asp Pro Tyr Phe Gln
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 VP3 Peptide

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VP3 Peptide

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Ile Thr Gly Val Gln
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VP3 Peptide

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Glu Cys Phe Ala Gln
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VP1 Peptide

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Thr Thr Met Lys Gln
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<210> 24
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VP1 Peptide

<400> 24
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Lys Gly Lys Ala Gln
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<210> 25
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VP1 Peptide.

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1 5 10 15

Ile Thr Thr Ile Gln
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VP1 Peptide

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Phe Pro Glu Leu Gln
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<210> 27
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VP1 Peptide

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Lys Pro Gly Glu Gln
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VP1 Peptide

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Ala Lys Lys Val Pro Glu Thr Phe Pro Glu Leu Lys Pro Gly Glu Ser
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Arg His Thr Ser Gln
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<211> 21
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VP1 Peptide

<400> 29
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Ser Ile Tyr Lys Gln
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VP1 Peptide

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1 5 10 15

Thr Phe Thr Phe Gln
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VP1 Peptide

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Phe Pro Ile Thr Gln
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VP1 Peptide

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1 5 10 15

Ala Leu Ser Ile Gln
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VP1 Peptide

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Phe Pro Arg Ala Gln
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VP1 Peptide

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Ser Asn Ala Met Gln
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VP1 Peptide

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1 5 10 15

Ile Ala Ala Gly Gln
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VP1 Peptide

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Arg Ser Glu Glu Gln
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VP1 Peptide

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1 5 10 15

Lys Arg Phe Glu Gln
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VP1 Peptide

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<400> 38
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1 5 10 15

Glu Cys Arg Lys Gln
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P2A Peptide

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Ser His Ile Glu Cys Arg Lys Pro Tyr Lys Glu Leu Arg Leu Glu Val
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Gly Lys Gln Arg Gln
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P2A Peptide

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Pro Tyr Lys Glu Leu Arg Leu Glu Val Gly Lys Gln Arg Leu Lys Tyr
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Ala Gln Glu Glu Gln
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P2A Peptide

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Gln Arg Leu Lys Tyr Ala Gln Glu Glu Leu Ser Asn Glu Val Leu Pro
1 5 10 15

Pro Pro Arg Lys Gln
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<210> 42
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P2A Peptide

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Val Leu Pro Pro Pro Arg Lys Met Lys Gly Leu Phe Ser Gln Ala Lys
1 5 10 15

Ile Ser Leu Phe Gln
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<210> 43

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P2A Peptide

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Met Lys Phe Ser Gln
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P2A Peptide

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Asn Ser Lys Asp Gln
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P2A Peptide

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Asp Leu Glu Glu Ile Ala Ala Asn Ser Lys Asp Phe Pro Asn Met Ser
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Glu Thr Asp Leu Gln
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<210> 46
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P2A Peptide

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Ile Lys Glu Gln
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P2A Peptide

<400> 47
Gln Arg Leu Lys Tyr Ala Gln Glu Glu Leu Ser Asn Glu Val Leu Pro
1 5 10 15
Pro Pro Arg Lys Met Lys Gly Leu Phe Gln
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<210> 48
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P2A Peptide

<400> 48
Trp Leu Asn Pro Lys Lys Ile Asn Leu Ala Asp Arg Met Leu Gly Leu
1 5 10 15
Ser Gly Val Gln Glu Ile Lys Glu Gln
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<210> 49
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P2B Peptide

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<400> 49
Val Ile Gln Gln Leu Asn Gln Asp Glu His Ser His Ile Ile Gly Leu
1 5 10 15

Leu Arg Val Met Gln
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<211> 21
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P2C Peptide

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Asn Ile Leu Lys Asp Asn Gln Gln Lys Ile Glu Lys Ala Ile Glu Glu
1 5 10 15

Ala Asp Glu Phe Gln
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<210> 51
<211> 21
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P2C Peptide

<400> 51
Leu Gly Ser Ile Asn Gln Ala Met Val Thr Arg Cys Glu Pro Val Val
1 5 10 15

Cys Tyr Leu Tyr Gln
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P2C Peptide

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Arg Cys Glu Pro Val Val Cys Tyr Leu Tyr Gly Lys Arg Gly Gly Gly
1 5 10 15

Lys Ser Leu Thr Gln
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P2C Peptide

<400> 53
Thr Lys Pro Val Ala Ser Asp Tyr Trp Asp Gly Tyr Ser Gly Gln Leu
1 5 10 15

Val Cys Ile Ile Gln
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<210> 54
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P2C Peptide

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1 5 10 15

Gly Arg His Phe Gln
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P2C Peptide

<400> 55
Leu Asn Met Ala Ser Leu Glu Glu Lys Gly Arg His Phe Ser Ser Pro
1 5 10 15

Phe Ile Ile Ala Gln
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P2C Peptide

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1 5 10 15

Leu His Phe Lys Gln
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P2C Peptide

<400> 57
Val Lys Glu Ala Ile Asp Arg Arg Leu His Phe Lys Val Glu Val Lys
1 5 10 15

Pro Ala Ser Phe Gln
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<210> 58
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P2C Peptide

<400> 58
Val Lys Pro Ala Ser Phe Phe Lys Asn Pro His Asn Asp Met Leu Asn
1 5 10 15

Val Asn Leu Ala Gln
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<210> 59
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P2C Peptide

<400> 59
Lys Asn Pro His Asn Asp Met Leu Asn Val Asn Leu Ala Lys Thr Asn
1 5 10 15

Asp Ala Ile Lys Gln
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<210> 60
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P2C Peptide

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 1 5 10 15
 Ile Met Asp Gly Gln
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<210> 61
 <211> 20
 <212> PRT
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 P2C Peptide

<400> 61
 Val Met Thr Val Glu Ile Arg Lys Gln Asn Met Thr Glu Phe Met Glu
 1 5 10 15
 Leu Trp Ser Gln
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<210> 62
 <211> 21
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 P3A Peptide

<400> 62
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 1 5 10 15
 Phe Gln Ser Phe Gln
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<210> 63
 <211> 21
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 P3A Peptide

<400> 63
 Asp Ser Ala Val Ala Glu Phe Phe Gln Ser Phe Pro Ser Gly Glu Pro
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 Ser Asn Ser Lys Gln
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<210> 64
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P3A Peptide

<400> 64
Phe Gln Ser Phe Pro Ser Gly Glu Pro Ser Asn Ser Lys Leu Ser Gly
1 5 10 15

Phe Phe Gln Ser Gln
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<210> 65
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P3A Peptide

<400> 65
Ser Ala Val Ala Glu Phe Phe Gln Ser Phe Pro Ser Gly Glu Pro Ser
1 5 10 15

Asn Ser Lys Leu Ser Gly Phe Phe Gln
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<210> 66
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P3B Peptide

<400> 66
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Val Glu Ser Gln
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P3C Peptide

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Gly Leu Val Arg Lys Asn Leu Val Gln Phe Gly Val Gly Glu Lys Asn
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Gly Cys Val Arg Gln
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<210> 68
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 P3C Peptide

<400> 68
 Asp Val Val Leu Met Lys Val Pro Thr Ile Pro Lys Phe Arg Asp Ile
 1 5 10 15
 Thr Gln His Phe Gln
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<210> 69
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 P3C Peptide

<400> 69
 Met Glu Glu Lys Ala Thr Tyr Val His Lys Lys Asn Asp Gly Thr Thr
 1 5 10 15
 Val Asp Leu Thr Gln
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<210> 70
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 P3C Peptide

<400> 70
 Lys Asn Asp Gly Thr Thr Val Asp Leu Thr Val Asp Gln Ala Trp Arg
 1 5 10 15
 Gly Lys Gly Glu Gln
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<210> 71
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 P3C Peptide

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<400> 71
Arg Gly Lys Gly Glu Gly Leu Pro Gly Met Cys Gly Gly Ala Leu Val
1 5 10 15

Ser Ser Asn Gln
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<210> 72
<211> 20
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<220>
<223> Description of Artificial Sequence:Synthetic HAV
P3C Peptide

<400> 72
Val Ala Lys Leu Val Thr Gln Glu Met Phe Gln Asn Ile Asp Lys Lys
1 5 10 15

Ile Glu Ser Gln
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<210> 73
<211> 21
<212> PRT
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P3D Peptide

<400> 73
Arg Ile Met Lys Val Glu Phe Thr Gln Cys Ser Met Asn Val Val Ser
1 5 10 15

Lys Thr Leu Phe Gln
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<210> 74
<211> 21
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P3D Peptide

<400> 74
Phe Thr Gln Cys Ser Met Asn Val Val Ser Lys Thr Leu Phe Arg Lys
1 5 10 15

Ser Pro Ile Tyr Gln
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<210> 75
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P3D Peptide

<400> 75

Met Leu Ser Lys Tyr Ser Leu Pro Ile Val Glu Glu Pro Glu Asp Tyr
1 5 10 15

Lys Glu Ala Ser Gln
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<210> 76

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P3D Peptide

<400> 76

Leu Asp Glu Asn Gly Leu Leu Leu Gly Val His Pro Arg Leu Ala Gln
1 5 10 15

Arg Ile Leu Phe Gln
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<210> 77

<211> 21

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P3D Peptide

<400> 77

Cys Pro Lys Asp Glu Leu Arg Pro Leu Glu Lys Val Leu Glu Ser Lys
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Thr Arg Ala Ile Gln
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<211> 21

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<223> Description of Artificial Sequence:Synthetic HAV
P3D Peptide

<400> 78

Ser Lys Thr Arg Ala Ile Asp Ala Cys Pro Leu Asp Tyr Ser Ile Leu
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Cys Arg Met Tyr Gln
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<210> 79
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P3D Peptide

<400> 79
Arg Met Tyr Trp Gly Pro Ala Ile Ser Tyr Phe His Leu Asn Pro Gly
1 5 10 15

Phe His Thr Gly Gln
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<210> 80
<211> 21
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P3D Peptide

<400> 80
Lys Thr Met Ile Arg Phe Gly Asp Val Gly Leu Asp Leu Asp Phe Ser
1 5 10 15

Ala Phe Asp Ala Gln
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<210> 81
<211> 21
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P3D Peptide

<400> 81
Asp Leu Asp Phe Ser Ala Phe Asp Ala Ser Leu Ser Pro Phe Met Ile
1 5 10 15

Arg Glu Ala Gly Gln
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<210> 82
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P3D Peptide

24

<400> 82
Ile Asn Asn Val Asn Leu Tyr Tyr Val Phe Ser Lys Ile Phe Gly Lys
1 5 10 15

Ser Pro Val Phe Gln
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<210> 83
<211> 21
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<213> Artificial Sequence

<220>
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P3D Peptide

<400> 83
Gly Gln Lys Ile Val Asp Glu Phe Lys Lys Leu Gly Met Thr Ala Thr
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Ser Ala Asp Lys Gln
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<210> 84
<211> 21
<212> PRT
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<220>
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P3D Peptide

<400> 84
Leu Gly Met Thr Ala Thr Ser Ala Asp Lys Asn Val Pro Gln Leu Lys
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Pro Val Ser Glu Gln
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<210> 85
<211> 21
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P3D Peptide

<400> 85
Pro Gln Leu Lys Pro Val Ser Glu Leu Thr Phe Leu Lys Arg Ser Phe
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Asn Leu Val Glu Gln
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<210> 86
<211> 20
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<223> Description of Artificial Sequence:Synthetic HAV
P3D Peptide

<400> 86

Ser Glu Lys Thr Ile Trp Ser Leu Ile Ala Trp Gln Arg Ser Asn Ala
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Glu Phe Glu Gln
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<210> 87

<211> 20

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic HAV
P3D Peptide

<400> 87

Ser Leu Ile Ala Trp Gln Arg Ser Asn Ala Glu Phe Glu Gln Asn Leu
1 5 10 15

Glu Asn Ala Gln
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<210> 88

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic HAV
P3D Peptide

<400> 88

Trp Gln Arg Ser Asn Ala Glu Phe Glu Gln Asn Leu Glu Asn Ala Gln
1 5 10 15

Trp Phe Ala Phe Gln
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<210> 89

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic
Peptide

<400> 89

Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
1 5 10 15

Ala Ala Ala Ala
20

<210> 90
<211> 21
<212> PRT
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<220>
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Peptide

<400> 90
Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
1 5 10 15
Ala Ala Ala Ala Gln
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<210> 91
<211> 20
<212> PRT
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<220>
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Peptide

<400> 91
Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1 5 10 15
Gly Gly Gly Gly
20

<210> 92
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Synthetic
Peptide

<400> 92
Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1 5 10 15
Gly Gly Gly Gly Gln
20

<210> 93
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Synthetic
Peptide

27

<400> 93
Gly Gly Gly Gly Gly Ala Ala Ala Ala Ala Gly Gly Gly Gly Gly Ala
1 5 10 15

Ala Ala Ala Ala
20

<210> 94
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Synthetic
Peptide

<400> 94
Gly Gly Gly Gly Gly Ala Ala Ala Ala Ala Gly Gly Gly Gly Gly Ala
1 5 10 15

Ala Ala Ala Ala Gln
20